Program: B.Tech in Electronics Engineering   Academic Year: 2022   Duration: 3 hours

Date: 11.01.2023

Time: 10:30 am to 01:30 pm

Subject: IOT Enterprise Network (Semester VII)   Marks: 75

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.

(1) This question paper contains two pages.

(2) All Questions are Compulsory.

(3) All questions carry equal marks.

(4) Answer to each new question is to be started on a fresh page.

(5) Figures in the brackets on the right indicate full marks.

(6) Assume suitable data wherever required, but justify it.

(7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1 (a)	Explain the concept of Receiver Sensitivity (define) & Free Space Path Loss (define). What is Link Budget, calculate this with an example that shows the tx side & rx side.	[08]
	OR	[08]
	Need for iso/osi model and compare or differentiate the OSI model with TCP/IP model explain the function of each layers and mention the protocols and the devices at each layer	
Q1 (b)	Explain HTTP, HTTPS, and DNS protocol	[07]
Q2 (a)	Explain the power consumption & calculations for AN-092 so that battery life can be estimated for this module. Draw the oscilloscope waveform with each consumption of current shown	[08]
	OR	
	Explain Energy Harvesting using the LTC 3588 features & application notes	[08]
Q2 (b)	Explain any two Internet Security Protocols – SSL, TLS and IPSec	[07]
Q3 (a)	Explain the BLE Protocol Stack/System Architecture (All layers, attributes & profiles). Hence, explain the BLE device states	[08]
	OR	
	Explain any two LP-WAN Communication Technologies used in IoT	[08]
Q3 (b)	Explain the Zigbee 3 Protocol Stack & its individual layers. How does Zigbee Mesh work & hence explain the Zigbee AODV Protocol	[07]
	OR	
	Explain the COAP protocol. Provide an end-end example with architecture of the system of when an application would use COAP and when MQTT	[07]
Q4 (a)	Explain the objectives for a routing protocol and hence explain in brief Distance Vector or Link State Routing Protocol with an example	[08]
	OR	
	Explain DoS and DDoS attacks. What is an Access List & how is port security enabled with access lists with an example of Packet Tracer	[08]

Q4 (b)	Explain the deployment models for Cloud Computing & hence explain IaaS, PaaS, SaaS	[07]
Q5 (a)	**Explain any two.** i. Serverless Computing & Lambda Functions ii. Containers & Kubernetes iii. AWS Direct Connect with Subnets & Stateful/Stateless packet filtering iv. AWS Storage Services	[04] [04] [04] [04]
Q5 (b)	Explain the AWS shared responsibility model for Security along with IAM console, policies roles & best practices	[07]

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